

REMARKS

In the outstanding Office Action, the Examiner rejected claims 1 and 6 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,318,925 to Kim ("Kim"); rejected claims 2-5 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of U.S. Patent No. 5,219,793 to Cooper et al. ("Cooper"); and rejected claims 7 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of U.S. Patent No. 6,159,842 to Chang et al. ("Chang") and further in view of U.S. Patent No. 6,331,480 to Tsai et al. ("Tsai"). No claims are amended herein. Claims 1-9 remain pending.

Regarding the Examiner's rejection of claims 1 and 6 under 35 U.S.C. § 102(b), Applicants disagree with the Examiner's assertions and conclusions as set forth in the outstanding Office Action¹. Accordingly, Applicants respectfully traverse this rejection.

In order to properly anticipate Applicant's claimed invention under 35 U.S.C. § 102, each and every element of the claim in issue must be found, "either expressly or inherently described, in a single prior art reference." "The identical invention must be shown in as complete detail as is contained in the . . . claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See MPEP § 2131, 8th Ed. (Rev. 2), May, 2004.

Applicants respectfully submit that Kim cannot anticipate claim 1, because Kim fails to teach a combination including "etching the interlayer insulating layer by using the

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement of characterization in the Office Action.

bit lines patterns *and* an etching mask defining a straight line shape *as a mask*,” as recited in claim 1 (emphasis added). As shown in Fig. 4A, Kim teaches charge storage electrode contact mask formed over portions of second interlayer insulating film and bit lines 5'. See Kim col. 4, lines 14-39. Applicants note, however, that as further shown in Fig. 4A, portion of bit line 5' is not covered by charge storage electrode contact mask 8, and “the exposed bit line 5' is etched and the remaining insulating layers 4 and 16 are etched to expose the source/drain electrode 3.” Kim, col. 4, lines 46-48 (emphasis added). Because portion 5' of bit line 5' is etched, the bit lines 5' are not used as a mask, Kim cannot provide a teaching of “using the bit line patterns ... as a mask,” as recited in claim 1. Kim thus fails to teach “etching the interlayer insulating layer by using the bit lines patterns and an etching mask defining a straight line shape as a mask,” as recited in claim 1.

On page 8 of the Office Action, the Examiner asserts that “Kim teaches ... etching the interlayer insulating film (16) by using the bit line patterns (5') and an etching mask (8) defining a straight line shape as a mask.” Contrary to the Examiner's assertion and as discussed above, however, Kim specifically teaches that “the exposed bit line 5' is etched and the remaining insulating layers 4 and 16 are etched to expose the source/drain electrode 3.” Kim, col. 4, lines 46-48. Because the bit line 5' is etched, it cannot constitute a mask. Kim thus fails to teach “etching the interlayer insulating layer by using the bit lines patterns and an etching mask defining a straight line shape as a mask,” as recited in claim 1.

Because Kim fails to teach every element of claim 1, Kim cannot anticipate claim 1. Accordingly, claim 1 is allowable over Kim, and claim 6 is allowable at least due to its dependence on claim 1. Applicants therefore respectfully request reconsideration and the withdrawal of the rejection of claims 1 and 6 under 35 U.S.C. § 102(b).

Applicants respectfully traverse the Examiner's rejection of claims 2-5 and 7-9 under 35 U.S. C. § 103(a) because the Examiner has failed to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or suggest each and every element recited in the claims. See MPEP §2143.03, 8th Ed. (Rev. 2), May, 2004. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of the three requirements must " be found in the prior art, and not be based on applicant's disclosure. " See MPEP § 2143, 8th Ed. (Rev. 2), May, 2004. At a minimum, the Examiner has failed to establish a *prima facie* case of obviousness because the references, whether taken alone or in combination, fail to teach or suggest each and every element of the claims.

Claims 2-5 and 9 depend from claim 1, and thus require all of the elements recited in claim 1. As discussed above, Kim fails to teach or suggest etching the interlayer insulating layer by using the bit lines patterns *and* an etching mask defining a

straight line shape *as a mask*,” as recited in claim 1, and required by claims 2-5 and 9 (emphasis added). Cooper fails to cue this deficiency of Kim.

Cooper shows in Figs. 4-5 insulating layer 18 formed over dielectric layer 16 and conductive layer 14. Cooper further teaches “portions of insulating layer 18 which are exposed in Fig. 4 undergo an anisotropic etch ... to expose portions of the substrate 12.” Cooper, col. 5, lines 44-47. Cooper is silent as to bit lines, and thus cannot teach or suggest a combination including “etching the interlayer insulating layer by using the bit lines patterns and an etching mask defining a straight line shape as a mask,” as recited in claim 1, and required by claims 2-5 and 9.

Because Kim and Cooper fail to teach or suggest every element required by claims 2-5 and 9, a *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims 2-5 and 9 under 35 U.S.C. § 103(a).

Regarding the rejection of claims 7 and 8, we note that claims 7 and 8 depend from claim 1, and thus require all of the elements recited in claim 1. As discussed above, Kim fails to teach or suggest at least “etching the interlayer insulating layer by using the bit lines patterns and an etching mask defining a straight line shape as a mask,” as recited in claim 1, and required by claims 7 and 8.

Chang is cited by the Examiner at page 7 of the Office Action for allegedly teaching “forming a low dielectric constant material layer HSQ layer (18) having a dielectric constant about 3.” Even if the Examiner’s characterization of Chang were correct, we note that Chang fails to cure the above-noted deficiency of Kim. As shown

in Fig. 1, Chang teaches forming first conductive layer 14 on substrate 10, wherein “first conductive layer 14 is then patterned by conventional photolithographic techniques.” Chang, col. 3, lines 64-65. Chang, however is silent as to “bit lines,” and thus also cannot teach or suggest “etching the interlayer insulating layer by using the bit lines patterns and an etching mask defining a straight line shape as a mask,” as recited in claim 1, and required by claims 7 and 8.

Tsai, cited by the Examiner at page 7 of the Office Action for allegedly teaching “etching low dielectric constant material HSQ,” also fails to cure the above-noted deficiency of Kim. Tsai is also silent as to “bit lines,” and thus cannot* teach or suggest “etching the interlayer insulating layer by using the bit lines patterns and an etching mask defining a straight line shape as a mask,” as recited in claim 1, and required by claims 7 and 8. Because Kim, Chang, and Tsai fail to teach or suggest each and every element required by claims 7 and 8, a *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims 7 and 8 under 35 U.S.C. § 103(a).

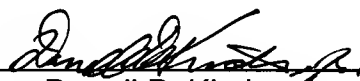
In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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